

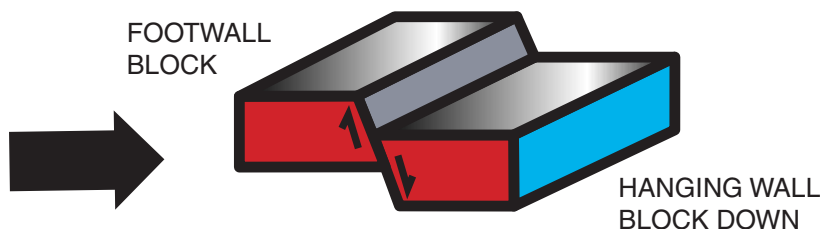
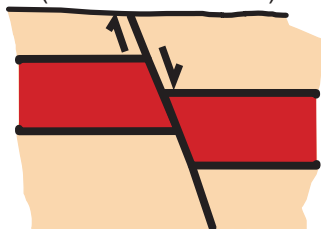
Fault Systems

□ Rocks respond to stress (being squeezed or pulled apart) near the Earth's surface by breaking. When rocks break and there is no offset along either side of the break, the break is called a fracture or joint. Rocks can also break as a result of thermal expansion and contraction, the effects of fluids freezing, or when rocks are squeezed together or pulled apart. When the rocks move past each other along fracture surface, it is called a faulting. Fault surfaces are often nearly planar, and that planar surface is referred to as a "fault plane."

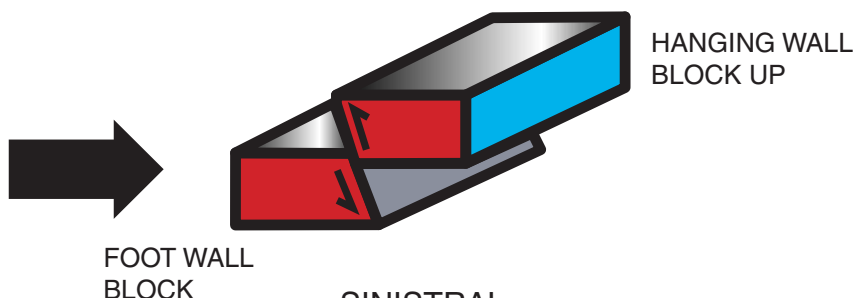
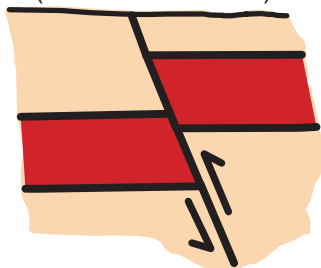
□ There are four types of faulting -- normal, reverse, strike-slip, and oblique. A normal fault is one in which the rocks above the fault plane, or hanging wall, move down relative to the rocks below the fault plane, or footwall. A reverse fault is one in which the hanging wall moves up relative to the footwall. When rocks on either side of a nearly vertical fault plane move horizontally, the movement is called strike-slip. An oblique-slip fault is special type fault that forms when movement is not exactly parallel with the fault plane. Oblique movement occurs when normal or reverse faults have some strike-slip movement and when strike-slip faults have either some normal or reverse movement.

□ It is not hard to recognize a fault when you look at an outcrop or an exposure. Usually, different rock types or rock features (such as quartz veins, mineral layers, or beds) are broken and offset along the fault plane. Faults are commonly marked by debris, or breccia, that forms when there is movement along the fault plane. Grinding of rock along the fault plane may also produce a clay-like, pulverized rock called gouge. Sometimes when the fault plane is exposed, you may see grooves, striations (scratches), and asymmetric fractures, called slickensides that provide visual evidence of movement.

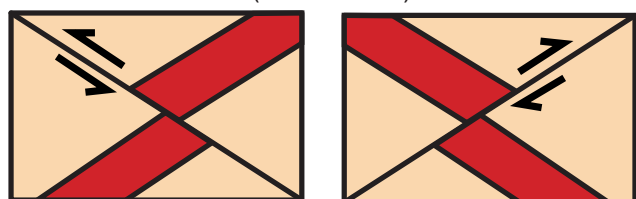
NORMAL FAULT
(CROSS SECTION)



REVERSE FAULT
(CROSS SECTION)

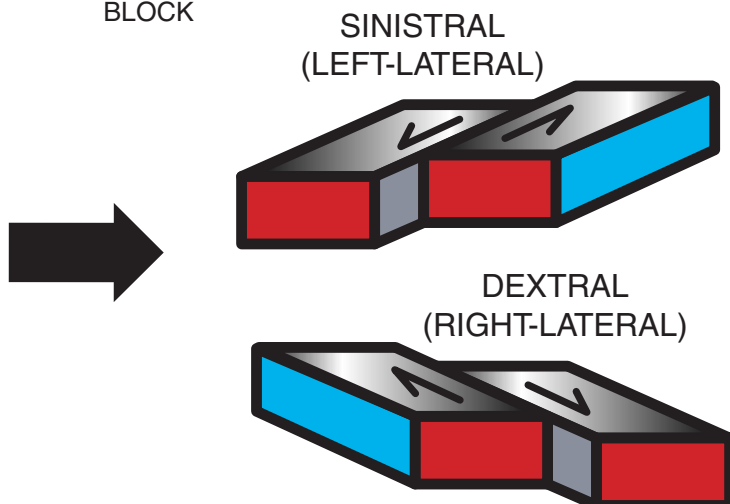


STRIKE-SLIP FAULT
(PLAN VIEW)



LEFT-LATERAL FAULT

RIGHT-LATERAL FAULT



Note: Movement determined by which side of the fault moves toward an observer looking along the fault plane.